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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,020	03/02/2004	Takahiro Sunaga	50395-256	9742
7590 05/03/2005				
McDERMOTT, WILL & EMERY 600 13th Street, N.W. Washington, DC 20005-3096				
		EXAMINER		
		PENG, CHARLIE YU		
		ART UNIT		PAPER NUMBER
		2883		

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,020

Applicant(s)

SUNAGA ET AL.

Examiner

Charlie Peng

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5 and 8-10 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/790,020.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: Ben Healy

DETAILED ACTION

Amendments

The amendments made by the Applicants to overcome objections made by the Examiner (Paper number 20041116) on specification, drawings, and claims 2, 4, and 8 have been accepted. The Examiner withdraws the aforementioned objections.

Claims 6 and 7 have been cancelled by the Applicant.

Claim Rejections - 35 USC § 102

Amendments filed on 14 March 2005 were received. The indicated allowability of claim 1 is withdrawn in view of the newly discovered reference(s) to U.S. Patent 6,243,178 to Suemura et al. Rejections based on the newly cited reference(s) follow. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1-4 are rejected under 35 U.S.C. §102(b) as being anticipated by Suemura et al. Suemura teaches a cross bar switching network having four first switching parts, each comprising one of four input port **79(i)**, a splitter **81(i)** that splits an incoming signal from the input port into four output signals, the four output signals are transmitted four output/coupling ports into four semiconductor amplifiers **183(i)**. (See at least **Fig. 28** and its descriptions) Suemura further teaches that the semiconductor amplifiers can serve as optical gate switches (or optical path on/off switching elements) rendered on and off to be operated as a crosspoint of the optical crossbar exchange and optical fibers such as **73(i)** are used to supply optical signals to the crossbar exchange. (See at least

Column 5, final two paragraphs) Suemura still further teaches opposite second switching parts having four semiconductor amplifiers **185(i)**, coupling ports into the combiners **181(i)**, and four output ports **87(i)**. By following through all the possible optical paths in the switching network, the differences between the maximum and the minimum in terms of number of the optical path switching elements is zero, i.e., number of optical path switching elements are all equal.

Referring now specifically to claims 2 and 4, the Applicant further discloses that, for each switching part, an optical path between a first coupling port Q1i and the input port would have "i"th fewest number of optical path switching element; and similarly for Q2j and the output ports. Since each optical path as taught by Suemura has the same number of optical path switching elements, any and all of the optical paths would have the "fewest" number of switching elements.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim 4, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Suemura et al. teach the optical switching network having the first and second switching parts connected by optical fibers, and optical path switching elements except for the optical path length from the input port to the output port being substantially the same. This is attributed to the staggered optical switching elements positioning by the Applicant. In contrast, Suemura teaches that the optical path length measured from, for example, the first input port to the first or fourth output port would be substantially different. It is the examiner's opinion that the prior art

of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claim 8 is objected to as being dependent upon a rejected base claim 1, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Suemura et al. teach the optical switching network having the first and second switching parts connected by optical fibers and optical path switching elements except for the optical path switching parts comprising planar waveguide having input ports, coupling ports, reflection mirrors inserted respectively in trenches and actuators driving the respective reflection mirrors. Since Suemura teaches the input and coupling ports to be physically separated from the optical switching elements, and combination or modification thereof would destroy the Suemura reference. It is thus the examiner's opinion that the prior art of record, taken alone or in combination, fails to disclose or render obvious in combination with the rest of the limitations of the base claim.

Claims 9 and 10 are also objected to but would be allowable by virtue of being dependent upon an allowable claim 8.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charlie Peng whose telephone number is (571) 272-2177. The examiner can normally be reached on 8:30 am - 5 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charlie Peng
charlie.peng@uspto.gov

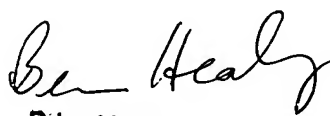
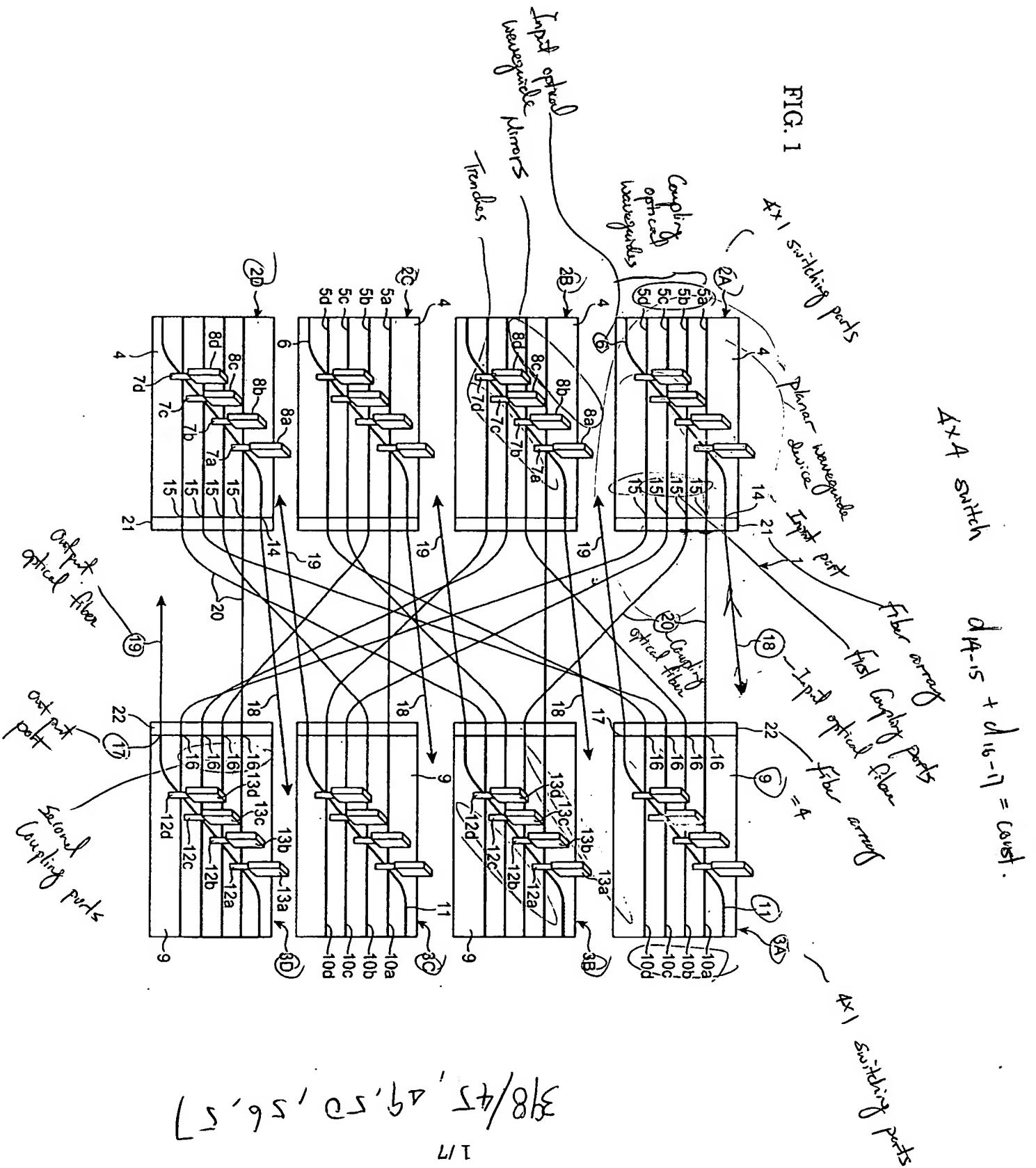

Brian Healy
Primary Examiner

FIG. 1



3/8/45, 49, 50, 56, 57

FIG. 2

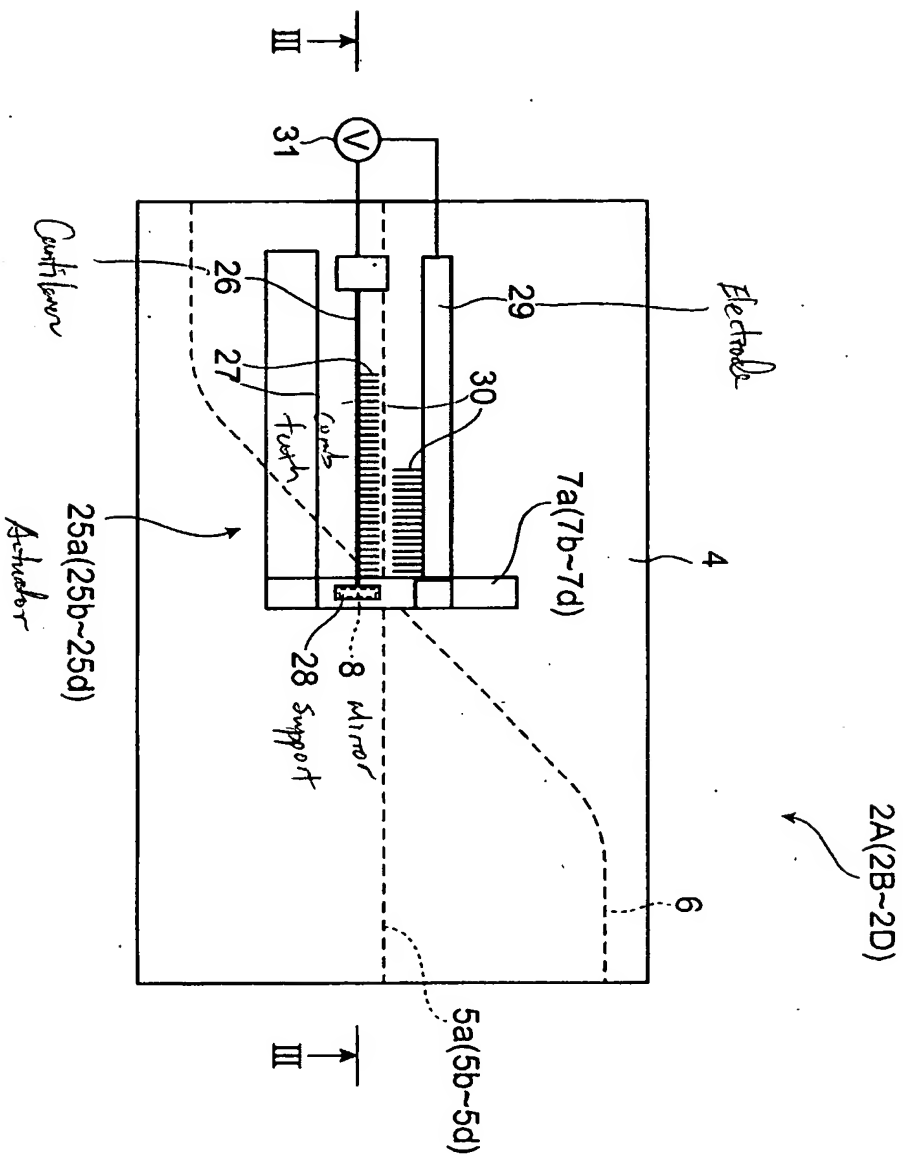
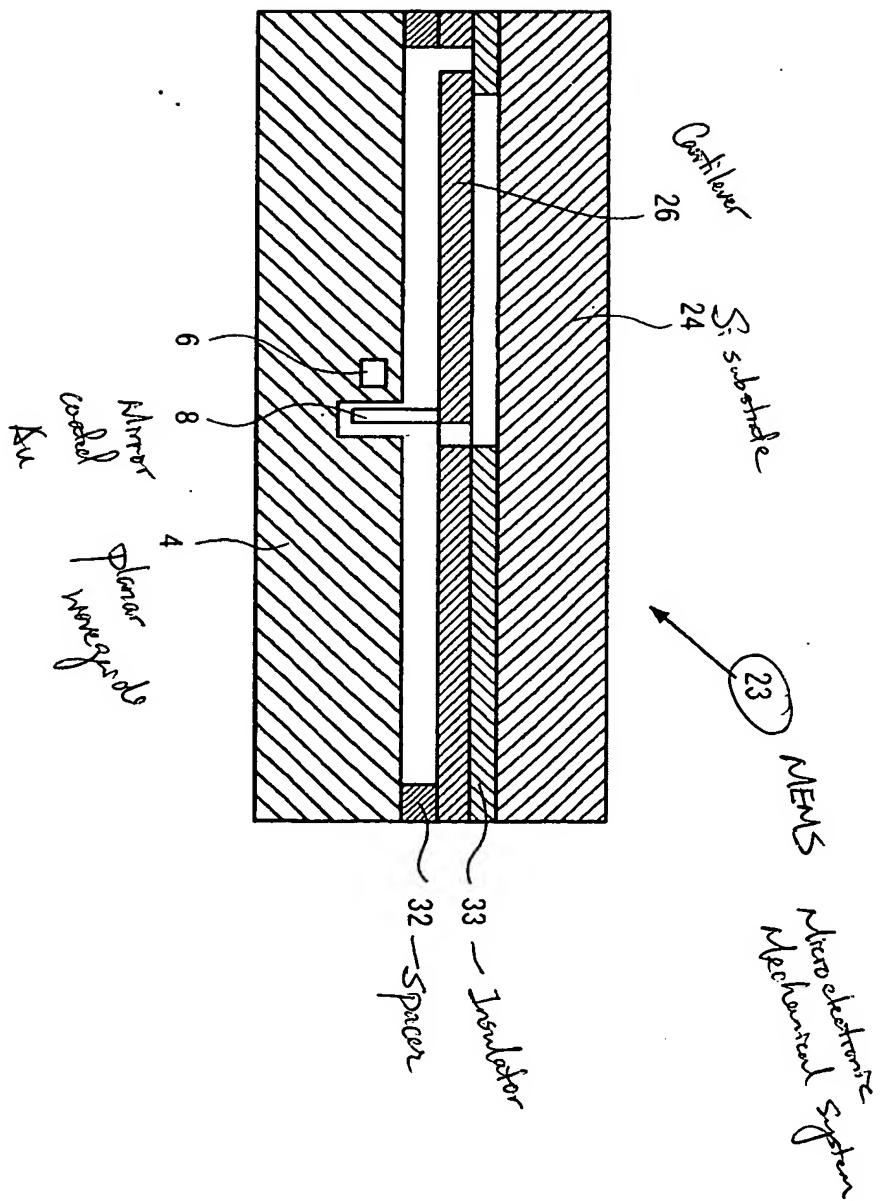


FIG. 3



2A(2B~2D)

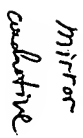


FIG. 5

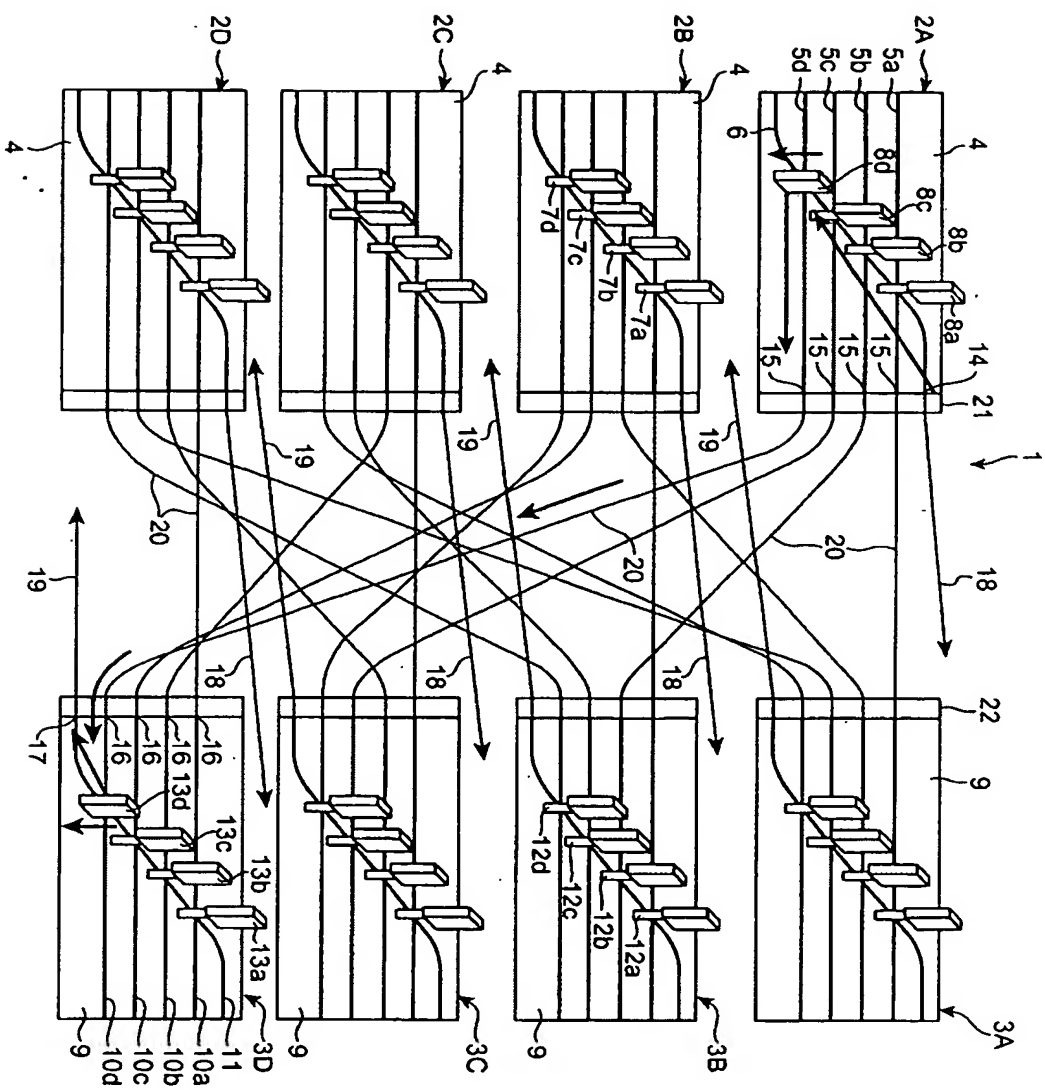
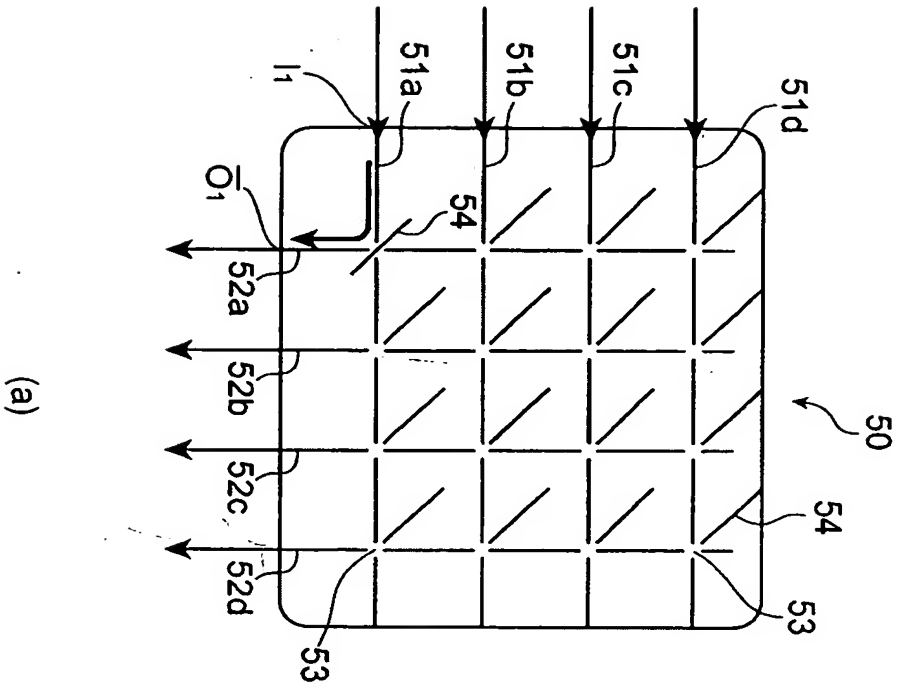
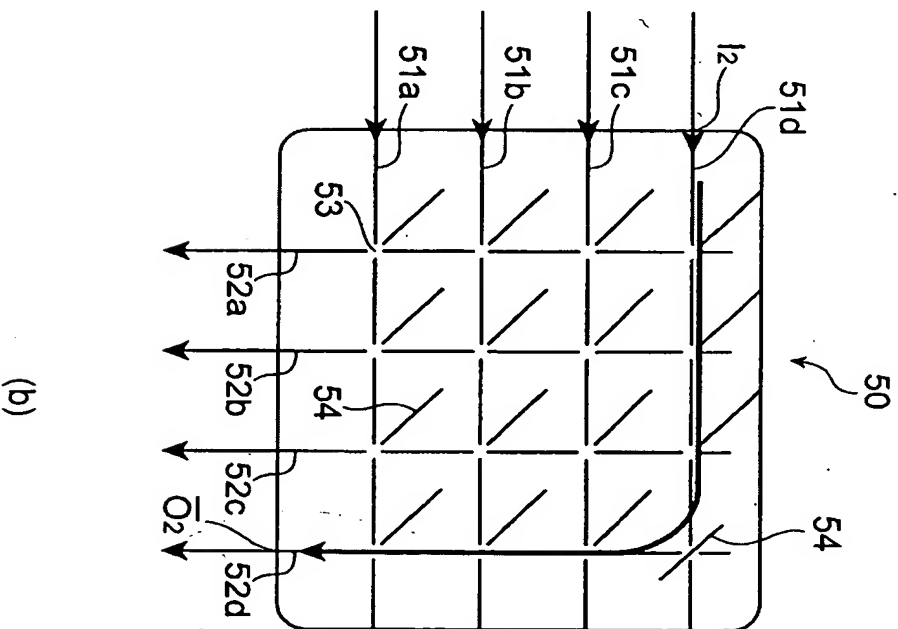


FIG. 6A



(a)

FIG. 6B



(b)

FIG. 7

